

What is claimed is:

1. A current-carrying/heating apparatus of liquid food, which carries a current to fluid heat-exposed food and heats the heat-exposed food by resistance heat obtained, the apparatus comprising:

a primary winding wound about an iron core and connected to an AC power supply; and

a heat pipe wound about said iron core, having a communication hole to which the heat-exposed food is supplied, and constituting an electric closed loop circuit through the heat-exposed food supplied to said communication hole,

wherein a magnetic flux is generated around said iron core by the current flowing to said primary winding, and a current, induced by an operation of electromagnetic induction of the magnetic flux, flows to the heat-exposed food.

2. A current-carrying/heating apparatus of liquid food, which carries a current to fluid heat-exposed food and heats the heat-exposed food by resistance heat obtained, the apparatus comprising:

a primary winding wound about an iron core and connected to an AC power supply;

a heat pipe wound about said iron core and having a communication hole to which the heat-exposed food is supplied; and

a conductive partition member provided in said heat pipe, physically closing said communication hole, and constituting an electric closed loop circuit along with the heat-exposed food supplied into said communication hole,

wherein a magnetic flux is generated around said iron core by the current flowing to said primary winding, and a current, induced by an operation of electromagnetic induction of the magnetic flux, flows to the heat-exposed food through said partition member.

3. A current-carrying/heating apparatus of liquid food, which carries a current to fluid heat-exposed food and heats the heat-exposed food by resistance heat obtained, the apparatus comprising:

a primary winding wound about an iron core and connected to an AC power supply;

a heat pipe wound about said iron core and having a communication hole to

which the heat-exposed food is supplied;

an insulating partition member provided in said heat pipe and physically closing said communication hole; and

a secondary winding wound about said iron core, having a terminal provided so as to be exposed to said communication hole on both sides of said partition member, and constituting an electric closed loop circuit along with the heat-exposed food supplied into said communication hole,

wherein a magnetic flux is generated around said iron core by the current flowing to said primary winding, and a current, induced by an operation of electromagnetic induction of the magnetic flux, flows to the heat-exposed food through said secondary winding.

4. The apparatus according to claim 1, wherein said heat pipe includes: a supply portion in which a supply hole communicating with said communication hole is provided and which supplies the heat-exposed food into said communication hole; and an exhaust portion in which an exhaust hole communicating with said communication hole is provided and which exhausts the heat-exposed food from said communication hole, and

the heat-exposed food is heated while continuously flowing into said communication hole.

5. The apparatus according to claim 2, wherein said heat pipe includes: a supply portion in which a supply hole communicating with said communication hole is provided and which supplies the heat-exposed food into said communication hole; and an exhaust portion in which an exhaust hole communicating with said communication hole is provided and which exhausts the heat-exposed food from said communication hole, and

the heat-exposed food is heated while continuously flowing into said communication hole.

6. The apparatus according to claim 3, wherein said heat pipe includes: a supply portion in which a supply hole communicating with said communication hole is provided and which supplies the heat-exposed food into said communication hole; and an exhaust portion in which an exhaust hole communicating with said

communication hole is provided and which exhausts the heat-exposed food from said communication hole, and

the heat-exposed food is heated while continuously flowing into said communication hole.

7. The apparatus according to claim 1, wherein said heat pipe includes a plurality of winding parts, which are winded about said iron core and continue helically.

8. The apparatus according to claim 2, wherein said heat pipe includes a plurality of winding parts, which are winded about said iron core and continue helically.

9. The apparatus according to claim 3, wherein said heat pipe includes a plurality of winding parts, which are winded about said iron core and continue helically.

10. The apparatus according to claim 4, wherein said heat pipe includes a plurality of winding parts, which are winded about said iron core and continue helically.

11. The apparatus according to claim 5, wherein said heat pipe includes a plurality of winding parts, which are winded about said iron core and continue helically.

12. The apparatus according to claim 6, wherein said heat pipe includes a plurality of winding parts, which are winded about said iron core and continue helically.